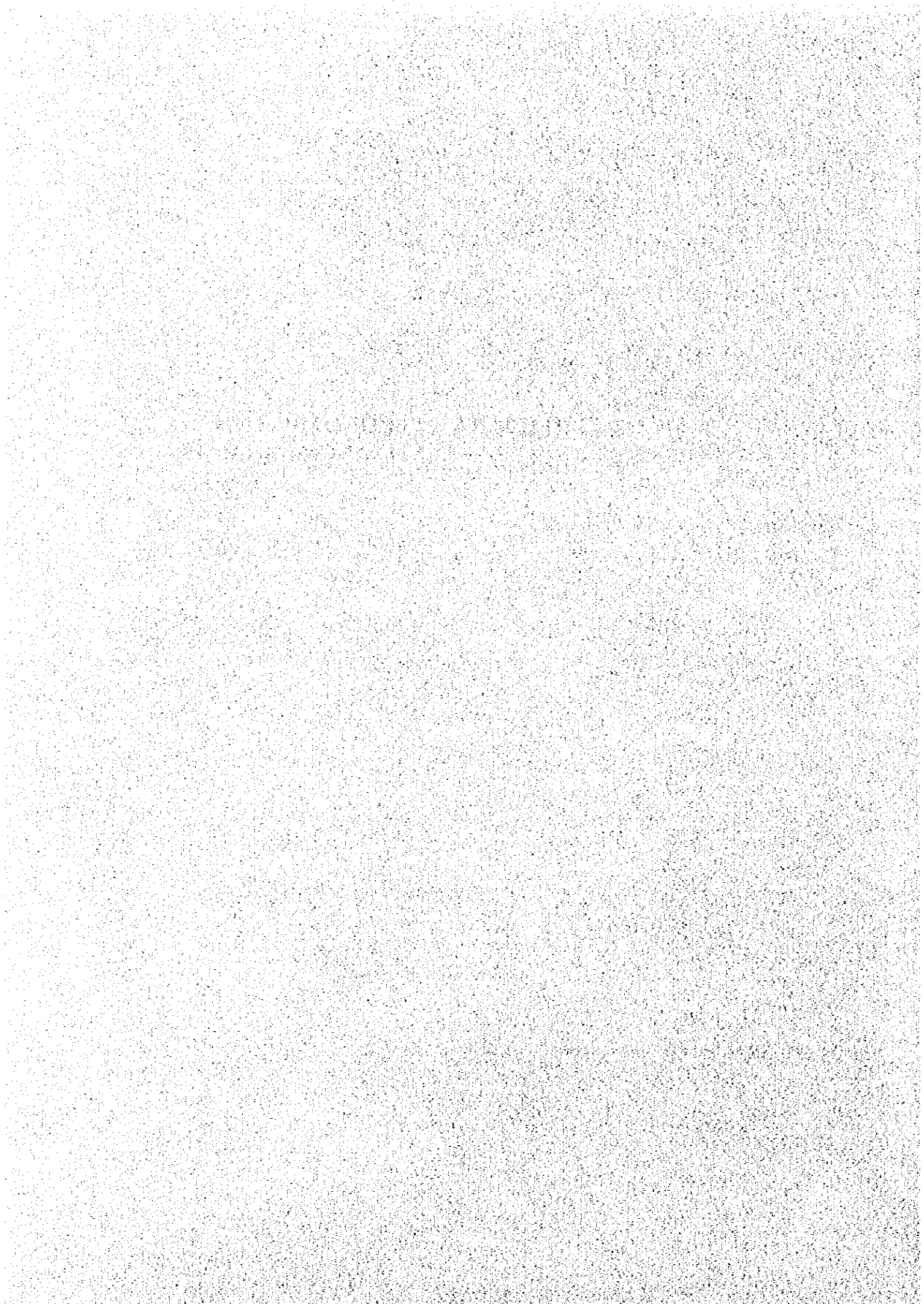


**CHAPTER 8 ECONOMIC AND
FINANCIAL ANALYSIS**



Chapter 8 Economic and Financial Analysis

1. Estimate of Investment Requirement

The investment cost required for implementing the facility development envisaged under the Tourism Master Plan was estimated with an accuracy level suitable for a nation-wide master plan study. It has to be noted, therefore, that this cost estimate is of preliminary nature and that it will have to be reviewed on basis of more detailed data and information.

Following the context of the whole study, the cost estimate was conducted on a sector-wise basis, that is for tourism facilities, transport networks, water supply, sewerage and waste disposal, power and communication and human resources development sectors.

These sectors are grouped into two, namely the private sector and the public sector. The private sector includes the hotel and marina sectors, while all other sectors are included in the public sector.

The base cost was estimated exclusive of taxes and duties and the base period was set at the end of 1994. An exchange rate of US\$1 =KSh50 =¥100 was assumed. The estimate was prepared for three time periods: "short term" covering up to the year 2000, "medium term" covering the period of 2001 to 2005 and "long term" covering the period of 2006 to 2010.

The cost estimate in this study has two purposes. Firstly, to estimate the magnitude of financial requirements needed for implementation of the Master Plan. Secondly, the cost estimates were used to appraise the overall viability of the Tourism Master Plan. The first purpose relates directly to the investment planning stated in the following section. The second purpose relates to the evaluation of the Master Plan stated in section 4 of this chapter.

Investment requirements needed for implementing the Master Plan were estimated by the following two steps.

Firstly, costs were estimated by each sector for the seven Priority Tourism Development Areas. The results are presented in Table 8. 1. Based on these estimations and the projection of hotel room requirements, investment costs per hotel room were computed as shown in Table 8. 2.

Table 8.1 Investment Requirement of Priority Tourism Development Areas

Unit: Kt million

Items	Nairobi	Mt. Kenya	Elgon/Kitale	Rift Valley Lakes	South Momb	Malindi	Lamu	Total	Share in %
1. Tourism Product related Facilities									
1996-2000	79.0	1.3	4.8	0.3	1.3	1.8	0.0	89.3	
2001-2005	63.8	0.0	4.0	0.0	0.3	4.8	0.3	73.0	
2006-2010	6.0	4.0	0.0	0.0	0.0	2.0	4.0	16.0	
Total	148.8	5.3	8.8	0.3	1.5	8.5	4.3	177.3	4.5
2. Hotel Accomodation									
1996-2000	446.8	17.0	64.3	42.0	97.8	335.8	8.0	1011.5	
2001-2005	489.3	49.8	78.8	32.8	288.5	358.3	84.8	1382.0	
2006-2010	275.0	66.5	90.8	41.3	231.0	149.3	234.8	1088.5	
Total	1211.0	133.3	233.8	116.0	617.3	843.3	327.5	3482.0	89.2
3. Tourist Service Facilities									
1996-2000	1.8	0.2	0.5	0.8	0.2	1.9	0.1	5.4	
2001-2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2006-2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	1.8	0.2	0.5	0.8	0.2	1.9	0.1	5.4	0.1
4. Road									
1996-2000	0.0	1.3	2.0	0.0	2.3	0.5	0.0	6.0	
2001-2005	0.0	34.0	0.0	12.5	0.9	0.4	0.0	47.8	
2006-2010	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	
Total	0.0	35.3	2.0	12.5	3.2	1.5	0.0	54.4	1.4
5. Airport									
1996-2000	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.5	
2001-2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2006-2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.5	0.1
6. Marina									
1996-2000	0.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	
2001-2005	0.0	0.0	0.0	0.0	0.0	7.5	0.0	7.5	
2006-2010	0.0	0.0	0.0	0.0	7.5	0.0	7.5	15.0	
Total	0.0	0.0	0.0	0.0	22.5	7.5	7.5	37.5	1.0
7. Water Supply									
1996-2000	4.4	0.0	1.1	1.1	15.8	7.2	1.2	30.9	
2001-2005	0.0	0.0	0.0	0.9	3.3	3.4	7.6	15.1	
2006-2010	0.8	0.0	0.4	0.9	2.0	1.3	5.9	11.4	
Total	5.2	0.0	1.6	2.9	21.1	11.9	14.7	57.4	1.5
8. Sewerage & Waste Disposal									
1996-2000	1.5	0.0	0.3	0.7	8.6	2.3	0.1	13.6	
2001-2005	1.5	0.0	0.3	1.0	3.0	3.6	2.0	11.4	
2006-2010	0.5	0.0	0.0	0.1	1.7	1.4	0.6	4.3	
Total	3.5	0.0	0.6	1.9	13.3	7.3	2.7	29.3	0.8
9. Power & Telecommunication									
1996-2000	0.0	0.4	2.7	1.8	0.0	3.0	0.0	7.8	
2001-2005	0.0	0.0	0.0	0.0	14.2	0.0	0.0	14.2	
2006-2010	0.0	0.0	0.0	0.0	0.0	0.0	33.8	33.8	
Total	0.0	0.4	2.7	1.8	14.2	3.0	33.8	55.8	1.4
Private Sector Investment									
1996-2000	446.8	17.0	64.3	42.0	112.8	335.8	8.0	1028.5	
2001-2005	489.3	49.8	78.8	32.8	288.5	365.8	84.8	1389.5	
2006-2010	275.0	66.5	90.8	41.3	238.5	149.3	242.3	1103.5	
Total	1211.0	133.3	233.8	116.0	639.8	850.8	335.0	3519.5	90.2
Public Sector Investment									
1996-2000	85.6	3.0	11.4	4.7	28.1	16.6	3.9	154.4	
2001-2005	65.2	34.0	4.3	14.4	21.7	12.1	9.8	161.5	
2006-2010	7.3	4.0	0.4	1.0	3.7	5.3	44.3	66.1	
Total	159.2	41.0	16.1	20.1	53.5	34.0	58.1	382.0	9.8
Total Investment Requirement									
1996-2000	533.4	20.0	75.7	46.7	140.9	352.4	11.9	1180.9	
2001-2005	554.5	83.8	83.0	47.2	310.2	377.8	94.6	1551.0	
2006-2010	282.3	70.5	91.2	42.3	242.2	154.5	286.6	1169.6	
Total	1370.2	174.3	249.9	136.1	693.2	884.7	393.1	3901.5	100.0
Share in %	35.1	4.5	6.4	3.5	17.8	22.7	10.1	100.0	

Source: JICA Study Team.

Note: Private Sector comprises Hotel Accomodation and Marina Sectors.

-At 1994 constant prices.

Table 8.2 Investment Cost per Hotel Room (K£ / Room)

	1996-2000	2001-2005	2006-2011
Private Sector	153210	151540	144561
Public Sector	24910	16340	8780

Note: At 1994 constant prices

Source: JICA Study Team

The investment requirements of the whole Master Plan was derived at as a product of investment costs per room multiplied by the projected number of hotel rooms in each Tourism Region.

In computing the investment cost per hotel room, the investment cost for airport and that for marina development were deducted from the total investment cost of seven PTDA's. The investment cost per room shown in Table 8.2 was obtained from this adjusted total investment cost of seven PTDA's, divided by the number of hotel rooms projected for the seven PTDA's.

The total investment requirements for the whole Master Plan was computed as follows :

- the base total investment was derived at by the above mentioned investment cost per room multiplied by the projected number of hotel rooms for each Tourism Region
- investment cost estimated for seven PTDA's in the sectors of airport, marina and human resource development were added to the base total after having been doubled to obtain the broad nation-wide estimate, and
- the investment cost of railway sector was added to the base total as well and, thus, the adjusted base total was divided by the projected number of hotel rooms of each Tourism Region in order to obtain the investment cost per hotel room.
- finally, the investment requirements of the whole Master Plan was obtained by this investment cost per hotel room multiplied by the projected number of hotel rooms in each Tourism Region.

The total investment requirement of the Master Plan is presented in Table 8.3.

Table 8.3 Total Investment Requirement of the Tourism Sector by Tourism Region

Region	Unit : K€ million							
	1996-2000		2001-2005		2006-2010		Total	
	Private	Public	Private	Public	Private	Public	Private	Public
1. Nairobi	446.8	86.6	489.3	65.2	275.0	7.3	1211.0	159.2
2. Central	71.9	11.7	209.1	22.5	238.5	14.5	519.5	48.7
3. Masailand	58.7	9.5	133.4	14.4	115.6	7.0	307.7	30.9
4. Western	181.7	29.5	219.7	23.7	232.7	14.1	634.1	67.3
5. Turkana	41.7	6.8	72.7	7.8	108.4	6.6	222.8	21.2
6. Northern	10.1	1.6	4.5	0.5	27.5	1.7	42.1	3.8
7. Tana Basin	1.5	0.2	93.8	10.1	72.3	4.4	167.6	14.7
8. Coastal	530.1	86.2	885.0	95.4	813.8	49.4	2228.9	231.0
9. Eastern	103.6	16.8	203.1	21.9	69.4	4.2	376.1	42.9
10. Nationwide	30.0	230.8	15.0	247.5	30.0	105.8	75.0	584.1
Total	1476.1	479.7	2325.6	509.0	1983.2	215.0	5784.9	1203.7
							(82.8%)	(17.2%)
(Prvt.+publ.)		1955.8		2834.6		2198.2		6988.6
		(28.0%)		(40.6%)		(31.4%)		(100%)

Note: At 1994 constant prices.

Source: JICA Study Team

As indicated in the above table, the investment requirements of the whole Master Plan is estimated to amount to 6,989 million K€ in total for the planning period from 1996 to 2010. Out of this total, the private sector investment accounts for a share of some 83%, mainly for the construction of tourist hotels. Public sector investment accounts for the remaining 17% of the total investment requirements, which includes those for the transportation, water supply and sewerage, power and telecommunication and human resources development sectors.

The breakdown of "Nationwide" in the above table is as shown in Table 8.4.

Table 8.4 Breakdown of "Nationwide" Sector in Table 8.3

Sectors	Unit : K€ million							
	1996-2000		2001-2005		2006-2010		Total	
	Private	Public	Private	Public	Private	Public	Private	Public
1 Railway	-	106.3	-	106.0	-	105.8	-	318.1
2 Airport	-	26.5	-	21.5	-	0.0	-	48.0
3 Marina	30.0	-	15.0	-	30.0	-	75.0	-
4 HRD	-	98.0	-	120.0	-	0.0	-	218.0
Sub-Total	30.0	230.8	15.0	247.5	30.0	105.8	75.0	584.1

Note: -At 1994 constant prices.

-'HRD' refers to human resources development.

Source: JICA Study Team

Total investment requirements are spread over three phases as follows. About 28% of total investment is required over the period 1996 to 2000. Some 41% of the total investment is required during the period 2001 to 2005 and the balance of 31% is required over the period 2006 to 2010. Public sector investment, however, is expected in the early stage

to pave the way for private investment. Hence, some 40% of total public investment is required over the period 1996 to 2000, 42% over the years 2001 to 2005 and the balance of 18% over the period 2006 to 2010. Thus, the majority of 82% of public investment will be needed before the year 2005.

2. Investment Planning and Financial Analysis

In the national accounting system of GDP, all investment including private and public investment and local and foreign investment is counted and recorded in the Gross Fixed Capital Formation (GFCF) account. In the GFCF account, the share of public investment constitutes the capital expenditure contained in the Development Budget of the Central Government. This in turn is detailed in the three-year Public Investment Plan (PIP) listed in "Printed Estimate of Development Expenditure", which contains the development projects in each sector.

The investment requirements for implementation of the Tourism Master Plan identified above are compared with the projected GFCF in Table 8.5.

Table 8.5 Availability of Investment Fund for Tourism Master Plan

Items	Unit: K€ million						
	Aver. 89-93	1993	96-2000	2001-05	2005-10	Total 96-2010	Growth 93-2010 (% p.a.)
1) GDP	22243	22686	146818	193139	253851	593808	5.49
2) GFCF	3793	3140	25034	32933	43285	101252	6.79
(% share in GDP)	17.05	13.84	17.05	17.05	17.05		
3) 4-Sector Investm't in GFCF	1399	1309	9235	12149	15968	37352	6.02
(% share in GFCF)	36.89	41.68	36.89	36.89	36.89		
4) Capital Expenditure in G.B.	1198	1162	7913	10410	13683	32006	5.49
(% share in GDP)	5.39	5.12	5.39	5.39	5.39	5.39	
Tourism Development Master Plan							
5) Total Investm't Requirem't			1956	2835	2198	6989	-
(% share in (2) above)			7.8	8.6	5.1	6.9	
(% share in (3) above)			21.2	23.3	13.8	18.7	
6) Public Investm't Requirem't			480	509	215	1204	-
(% share in (4) above)			6.1	4.9	1.6	3.8	

Note: -At 1994 constant prices.

- "4-Sector" refers to "Trade, Restaurant and Hotels", "Electricity & Water",

"Transport, Storage & Communication" and "Building & Construction".

- "G.B." refers to Government Budget.

Source: -Projections in the table were carried out by JICA Study Team.

The projection of GFCF was made in this study based on the historical share of GFCF in GDP. According to the statistics of 1989 to 1993, the share of GFCF in GDP averaged 17%. This ratio was applied in projecting the future GFCF and the said share was assumed to be kept constant over the study period.

As tourism investment is multi-sectoral by nature, the following four sectors in the GFCF account have been taken and aggregated for comparative reasons:

- Trade, restaurants and hotels
- Electricity and water
- Transport, storage and communication, and
- Building and construction.

The share of those four sectors in GFCF was also projected based on their historical share in total GFCF. As shown in Table 8.5, investment requirements for the Tourism Master Plan in the short term up to the year 2000 are projected to absorb about 21% of the total investment for the four sectors. The said share will subsequently decrease to about 14% in the long term, averaging about 19% through the period up to the year 2010.

The capital expenditures in the government budget was projected based on its historical share in GDP. This share is also shown in Table 8.5. This capital expenditure is compared with public investment for infrastructure in the Tourism Master Plan. As shown in the table, the share of total public investment requirements for the Tourism Master Plan in capital expenditures of the government budget is estimated at about 6% in the short term and 2% in the long term with the average over the period up to the year 2010 will be some 4%.

The above shares of the investment requirements for the Tourism Master Plan in GFCF and the capital expenditure of the government budget do indicate that the scale of investment for implementing the Tourism Master Plan is moderate and, therefore, implementable.

3. Economic and Financial Analysis

3.1. Contribution to Foreign Exchange Earnings

The expenditures of international tourists in Kenya for hotels, restaurants, national parks, souvenir shops and transportation constitute the foreign exchange earnings to Kenya.

Kenya's major exports are composed of primary agricultural products, such as coffee, tea and the like. Foreign exchange revenues generated from such exports are vulnerable to weather conditions of the year and international market prices of commodities fluctuate very much according to such natural conditions. Compared to agricultural production, the number of inbound tourists is rather stable and the tourism sector can, therefore, be a reliable source of foreign exchange earnings for Kenya.

In 1993, the foreign exchange receipt (gross) of the tourism sector amounted to 1,534 million K£ (at 1994 constant price level, equivalent to 613 million US \$). This was equivalent to about 14% of Kenya's gross foreign exchange earnings in the total current account of Kenya as shown in Table 8.6.

Table 8.6 Projection of Foreign Exchange Earnings from International Tourists

Items		1993	Projection			Growth 93-2010 (% p.a.)
			2000	2005	2010	
1) Foreign Tourist Arrival	(million)	0.777	1.100	1.600	2.100	6.0
2) Forex Expend.per Tourist	('82 K£)	348.0	402.4	446.5	495.4	2.1
	('94 K£)	1820.0	2104.6	2335.2	2590.9	2.1
3) Forex Earnings from Tourists	('82K£mil.)	270.5	442.6	714.4	1040.3	
	('94K£mil.)	1414.9	2315.0	3736.3	5441.0	8.2
4) Ditto (gross)	('94K£mil.)	1534.3	2510.3	4051.5	5900.0	8.2
5) Current Account (B/P gross)	('94K£mil.)	10696.1	12504.7	16639.2	21706.4	4.3
	(% to GDP)	47.2	38.6	38.6	38.6	
6) Ratio of Forex Earnings to Current Account	(%)	14.3	20.1	24.3	27.2	
7) Projected GDP (1982 price)	(K£mil.)	4337.6	6202.2	8252.9	10766.2	5.5
Projected GDP (1994 price)	(K£mil.)	22685.6	32437.5	43162.7	56307.2	5.5

Note : 1) Projections in the table were conducted by JICA Study Team.

2) "gross" refers to the value of forex receipt from abroad discriminated from forex payment to abroad.

3) "B/P" refers to balance of payment.

In the present study, foreign tourist arrivals are targeted to increase from 777,000 in 1993 to 1,100,000 in the year 2000 and 2,100,000 by the year 2010. Accordingly, foreign exchange earnings (gross basis) of the tourism sector are expected to rise to 2,510 million K£ (at 1994 prices, equivalent to 1,004 million US \$) in 2000 and 5,900 million K£ (2,360 million US \$) by the year 2010. The share of foreign exchange earned by the tourism sector to total current account is expected to rise to 20% in the year 2000 and in 2010 to some 27%. In the above table, projections of the current account in the balance of payments were carried out based on its historical share over the period 1989 to 1993 of 38.6% in GDP.

3.2. Investment Effects

Tourism development requires investments in multiple sectors, such as hotels, restaurants, recreation facilities, water supply, sewerage and waste disposal, roads, bridges, airports and seaports. These primary investments will induce secondary and tertiary investments in other related sectors, which provide inputs for the above sectors.

The relationship between capital investment and the resulting output is expressed in the capital output ratio (COR), which indicates the capital investment required for the production of one unit of output. The historical COR of Trade, Restaurants and Hotels sector in Kenya is as shown in Table 8.7.

Table 8.7 Capital Output Ratios of TRH Sector (at 1982 prices)

	Unit : K£ million					Average 80-92
	1980	1985	1990	1991	1992	
1) Capital Stock						
-TRH Sector	472.0	474.0	446.0	440.0	468.0	460.0
-Manufacturing	1187.0	1285.0	1404.0	1461.0	1496.0	1366.6
-Total Monetary Economy	12265.0	14700.0	16829.0	17357.0	17869.0	15804.0
2) GDP at factor cost						
-TRH Sector	318.4	355.2	466.0	472.1	478.9	418.1
-Manufacturing	351.5	424.1	560.3	581.6	588.6	501.2
-Total Monetary Economy	2627.1	3112.1	3994.0	4077.0	4090.0	3580.0
3) Capital Output Ratio						
-TRH Sector	1.48	1.33	0.96	0.93	0.98	1.10
-Manufacturing	3.38	3.03	2.51	2.51	2.54	2.73
-Total Monetary Economy	4.67	4.72	4.21	4.26	4.37	4.41

Note : "TRH Sector" refers to Trade, Restaurants and Hotels Sector.

Source : "Historical Economic Data for Kenya : 1972-92" prepared by MOPND

As shown in the table, COR of TRH sector in the average of figures in table was 1.1, while those of manufacturing sector and the total monetary economy were 2.7 and 4.4 respectively. This implies that TRH sector requires less capital investment than the manufacturing sector and total monetary economy in producing one unit of sector output.

This can be reasonably understood judging from the labour intensive nature of the tourism sector. From the point of view of productivity of capital, the investment in tourism sector can be highly appreciated.

3.3. Income Effect

The expenditures of international tourists in Kenya at hotels, restaurants, national parks, souvenir shops and in the transportation industry, all of which are referred to in this report as "tourism industries", constitute the sales of these industries. The sales of tourism industries are composed of two parts : one part generates the value added of the tourism industries itself and another part constitutes the payment to the "tourism related industries", which provide food, beverages, souvenir products and linen services to hotels and restaurants, and also provide gasoline, lubricant and other services to transportation companies.

The former part of the international tourist's expenditures, that is the value added to the tourism industries, is paid to the employees of the tourism industries and is further spent to purchase many consumables needed for daily life and it will generate another income to the receiver of the payments.

The latter part of the international tourist's expenditure, that is the purchase of the inputs required for the tourism industries, is transferred to the tourism related industries and constitutes the sales of these industries. One part of this generates their own value added and another part is spent to purchase their own inputs to produce their products.

Thus, the effect induced from the expenditure of international tourists will expand to many related industries in the national economy and also generates new employment in these related industries. Broadly speaking, these effects are classified into the following two categories :

- "Income generating effect", which corresponds to the former category of the above, and
- "Input purchasing effect", which corresponds to the latter of the above categories.

From the point of view of the whole national economy, both effects mentioned above are influenced by the extent of self-sufficiency. If many goods and services required in the tourism sector are to be imported from abroad, the income effect as a whole will be reduced accordingly. It is desirable for the tourism related industries to become capable of supplying goods to the tourism industry sufficiently enough in terms of both, quantity and quality so that the tourism industry does not need to import them from abroad.

3.4. Employment Generation Effect

The tourism sector is labour intensive by nature. This is due to the characteristics of the sector, in which person-to-person services constitute the major portion of the activities of the sector. This brings about the comparatively low productivity of labour in this sector. The same characteristics contribute to the enhancement of employment.

In the present study, the future employment is estimated based on the projection of hotel room requirements in the future, which is detailed in Chapter 2 of this volume and is summarized in Table 8.8.

Table 8.8 Projection of Employment in Tourism Sector

	Unit : 10 ³				
	1984	1993	2000	2005	2010
1) Modern Wage Sector (Ditto. growth % p.a.)	1150	1709	2330	2904	3618
		4.5	4.5	4.5	4.5
2) Tourism Sector(JICA) (Ditto. growth % p.a.)	-	155	223	328	431
	-	-	5.3	8.0	5.6
3) % share of (2) to (1)	-	9.1	9.6	11.3	11.9

Source: "Sessional Paper No.1 of 1986"

Note: Projections in the table were made by JICA Study Team.

The number of employment in the tourism sector was estimated at 155,000 in 1993, which is projected to increase to 223,000 in 2000 and to 431,000 by the year 2010.

In the above table, the projected employment in the tourism sector is compared with the total modern wage employment that is extrapolated based on the forecast of "Sessional Paper No.1 of 1986 on Economic Management for Renewed Growth". In the said paper, only the historical figures for 1984 and the forecast for the year 2000 with an average growth rate of 4.5% per annum are available. The number of modern wage sector employment were extrapolated to the future by applying these available figures.

As shown in Table 8.8, the share of employment in the tourism sector is projected to increase from 9% of the total modern wage employment in 1993 to 10% in the year 2000 and 12% by the year 2010.

3.5. Impact for Regional Development

The tourism development is highly appreciated in many countries as an effective measures to promote regional development, due to the facts that it can create new employment and that the tourism sector development can induce the ripple effects in many related sectors in the region. These consequently contribute to increase the regional income and mitigate the income disparity among regions.

The impact of the improvement of social infrastructure such as road, local airport and telecommunication, though its effect cannot be measured in monetary terms, is substantial for regional development.

A new development activity in a remote province usually costs developers more than that to be conducted in an already established area. Therefore, some incentives by the central government to encourage investments in such remote areas are desirable. A special measure of tax deduction for new investments in local provinces can be effective for the dispersal of private investment. The said incentives will also include subsidies by the government for the construction of

roads, bridges, rural electrification and local water supply systems needed for tourism projects.

4. Evaluation of the Master Plan

For the evaluation of the Tourism Master Plan, a preliminary examination was carried out for the purpose of confirming the viability of the Master Plan as a whole.

Based on the investment cost estimate presented in the previous Table 8.3, all the resources including those in both, the private and public sectors, which are required for the implementation of the Tourism Development Master Plan, were compiled and constitute the capital investment cost of the Master Plan. It is to be noted that the said cost is not the cumulative total of sub-projects but a broad and sketchy estimate based on the investment cost estimate for seven Priority Tourism Development Areas.

The incremental foreign exchange earnings to be generated by the increased number of international tourists were considered as the benefit to be accrued by implementing the Tourism Master Plan. The tourist's daily expenditures per capita was estimated at 115 US\$ in 1994, which was derived from the result of an airport interview survey conducted by JICA study team. The future increase of 1.9% per annum was assumed up to the year 2010 based on the projection of daily expenditure per tourist. The benefit stream was obtained by this daily per capita expenditure multiplied by the incremental number of tourist nights, which was also projected by JICA study team. Any backward and forward linkages are not included in this benefit stream. The identified benefit stream is therefore underestimated from the point of view of socio-economy as a whole.

As for the operation and maintenance costs of the capital investment, 10% of the capital investment was assumed for public sector investment. For the private sector, 10% of the capital investment was assumed for maintenance cost and 60% of the earnings from tourist's expenditures was assumed for the operation cost, which was deducted from the benefit stream. For the estimate of the said operation cost ratio, "The Hotel Industry in Kenya 1991 Edition" was referred to.

The evaluation period was set at 30 years from the construction start. The opportunity cost of capital (OCC) of 10% was also assumed.

The result of the evaluation is presented in Table 8.9. The derived benefit cost ratio was 1.6, which proves the viability of the aggregated investment for the Master Plan.

The sensitivity of the benefit stream was tested by varying the operation cost of the private sector from 60% of tourist's expenditures to 50% and 70%. The result showed that B/C values increased to 2.1 in

the case of 10% decrease of operation costs. The value of B/C was 1.2 and still more than unity in the case of 10% increase. The result is shown in Table 8.10 together with a change in net present values.

Table 8.10 Sensitivity Analysis of Evaluation of Tourism Master Plan

Discount Rate	10%			15%			
	Operat. Cost Ratio	50%	60%	70%	50%	60%	70%
1) Benefit Cost Ratio		2.1	1.6	1.2	1.7	1.3	1.0
2) Net Present Value (K£ mil.)		7294	4462	1630	3036	1517	-2

Another sensitivity test was also carried out by varying the discount rate from 10% to 15%. The results of this exercise are shown in the same table. Values of benefit cost ratio were obtained at 1.7 for the case of 50% operating cost, 1.3 for 60% and 1.0 for the 70% cases. Even in the case of 70% operating cost under the discount rate of 15% the benefit cost ratio was still nearly unity, though the net present value showed a marginally negative value.

In order to avoid the problem of valuation of the opportunity cost of capital in Kenya, an internal rate of return (IRR) was computed in the same table, Table 8.9. The IRR is defined as a discount rate by which the discounted value of the cost stream will be equalized by the discounted value of the benefit stream. An IRR of 22.8% was derived as shown in the table. This means that, if the OCC in Kenya is less than 22.8%, the benefit stream of the Master Plan will exceed the cost stream. Since this assumption that the OCC in Kenya is less than 22.8% seems to be probable when the levels of rediscount rate for treasury bills and the interest rates on loans of commercial banks are considered, the viability of the aggregated Tourism Master Plan can be said to be assured.

Table 8.9 Aggregated Evaluation of Tourism Development Master Plan

		Unit: K€mil.						
No.	Year	Capital Investm't		O & M	Total	Incremental Benefit		B - C
		Privat.	StPublic S	Cost	Capital & O & M	Tourist- Nights	Forex Earning	
(million)								
1	1996	295.2	96.0	39.1	430.3	0.7	75.6	-354.7
2	1997	295.2	96.0	78.2	469.4	1.3	154.0	-315.4
3	1998	295.2	96.0	117.4	508.5	2.0	235.5	-273.1
4	1999	295.2	96.0	156.5	547.7	2.6	319.9	-227.7
5	2000	295.2	96.0	195.6	586.8	3.3	407.5	-179.3
6	2001	465.1	101.8	252.3	819.2	4.8	601.2	-218.0
7	2002	465.1	101.8	309.0	875.9	6.2	802.2	-73.8
8	2003	465.1	101.8	365.7	932.6	7.7	1010.5	77.9
9	2004	465.1	101.8	422.4	989.3	9.2	1226.5	237.2
10	2005	465.1	101.8	479.1	1046.0	10.6	1450.3	404.3
11	2006	396.7	43.0	523.0	962.7	12.2	1693.4	730.8
12	2007	396.7	43.0	567.0	1006.6	13.8	1945.2	938.6
13	2008	396.7	43.0	611.0	1050.6	15.3	2206.0	1155.4
14	2009	396.7	43.0	654.9	1094.6	16.9	2475.9	1381.4
15	2010	396.7	43.0	698.9	1138.5	18.4	2755.3	1616.8
16	2011	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
17	2012	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
18	2013	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
19	2014	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
20	2015	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
21	2016	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
22	2017	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
23	2018	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
24	2019	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
25	2020	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
26	2021	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
27	2022	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
28	2023	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
29	2024	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
30	2025	0.0	0.0	698.9	698.9	18.4	2755.3	2056.5
NPV(10%)		2793.6	666.3	3405.3	6865.2	79.9	11327.2	4462.0
							NPV(10%)=	K€4462mil
							B/C(10%)=	1.6
							IRR=	22.8%

Note :

- O & M cost was assumed at 10% of the investment cost for public sector. For private sector, the maintenance cost was assumed at 10% of the investment and the operation cost was assumed at 60% of tourist's expenditures which was deducted from the benefit stream.
- "Forex Earnings" was computed assuming the foreign tourist's per capita per day expenditure of US\$115 based on the airport survey conducted by JICA Study Team, which was increased by 1.9% p.a. upto 2010.

5. Coordination of Public and Private Sectors

The foregoing perspectives in foreign exchange earnings and employment generation to be brought about by tourism sector development rely upon many preconditions including tourist arrivals, private sector investment and public sector investment.

As shown in Table 8.3, a majority of 83% of the total investment requirements of the Tourism Master Plan will have to originate from the private sector. Therefore, the key for success of implementation of the Tourism Mater Plan is how to attract private investors into the tourism sector.

Various investment incentives are currently implemented in hotel industry as well as manufacturing sector. They include investment allowance, liberal rates depreciation, loss carried forward and remission from custom duties.

The economic incentives proposed in Chapter 5 of Volume 1, however, are further desirable from the point of view that tourism sector constitutes a large contributor of foreign exchange earnings in Kenya.

Apart from the economic incentives, administrative and organizational strengthening are required for the improvement of private investment environment. In the above-mentioned Chapter 5, new establishment of Tourist Board which aims to improve tourist information networks in various aspects and Tourist Development Bank which aims to facilitate financing small and medium scale enterprises is proposed. The reform of KTDC is also proposed aiming at strengthening its planning and implementing capacities for tourism projects.

For the participation of local residents and private sectors to development projects in Tourism Promotion Zone (TPZ) , the TPZ Development Committee is proposed as well. Interests of local residents and private investors can be reflected to this committee where future tourism projects in TPZ will be reviewed and authorized.

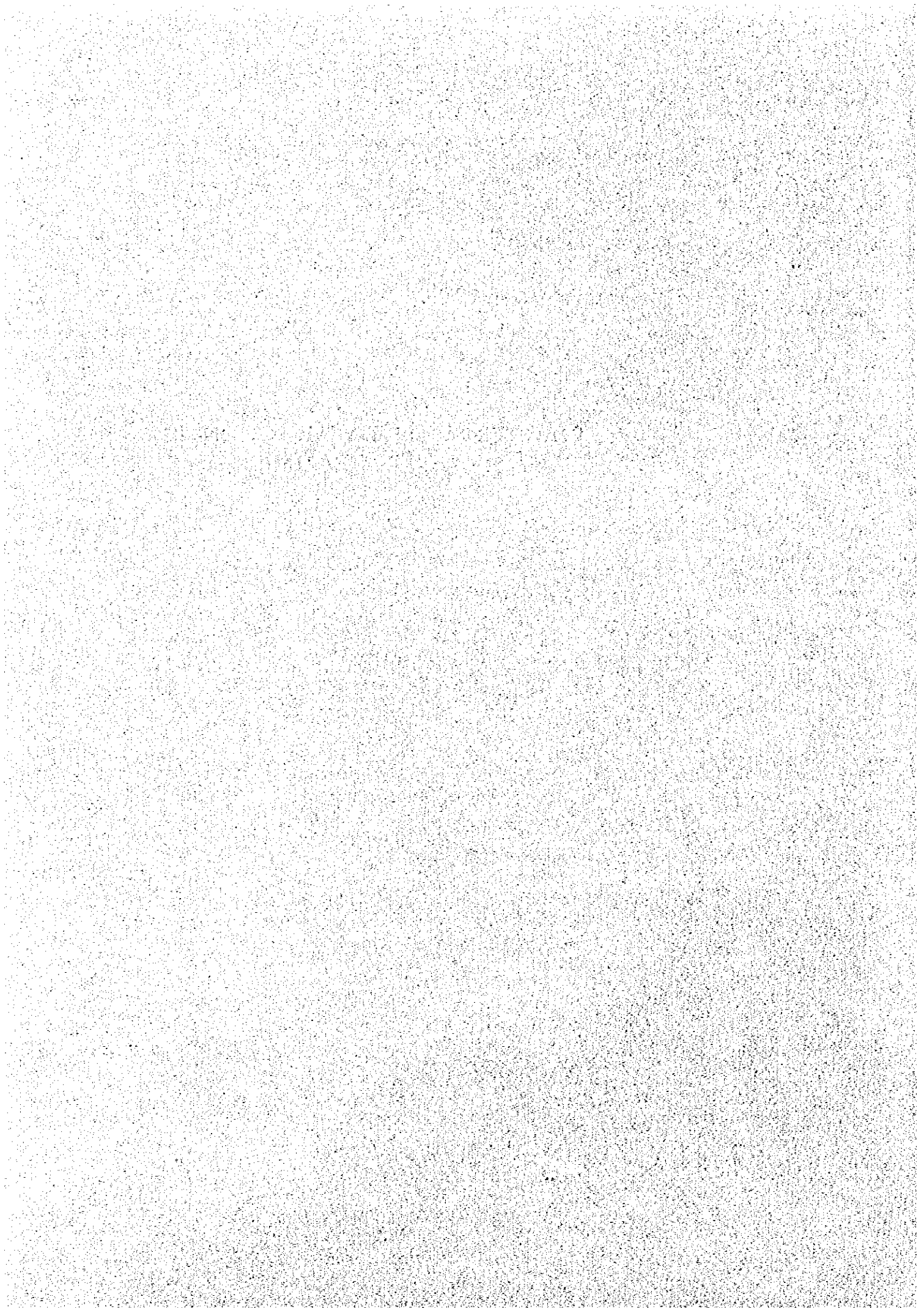
Such legislative arrangements are also proposed as to enact the Basic Tourism Law and to establish the Tourism Council as an advisory organization for MOTW.

A series of these reforms in the areas of government and parastatal organizations would encourage private sector to join tourism projects in the near future.

More basically, liberalization of economy including that of trade and foreign exchange which are now on-going and various deregulation measures will pave the way for private investors including foreign investors to enter into tourism sector business.

Summing up, what is to be done by government agencies is to prepare an investment environment where private enterprises are encouraged to enter into. In other words, tourism sector should desirably be profitable enough to attract private investments required for its development.

**CHAPTER 9 FIVE-YEAR ACTION
PROGRAMME**



Chapter 9 Five-Year Action Programme

1. Tourism Development Issues

Five-Year Action Programme is formulated for the designated priority tourism development areas. Actions to be taken at national level are also included not only for the priority tourism development area, but also for the tourism development of the country as a whole.

Issues for national tourism development are:

- Environmental conservation
- Improvement of travel conditions (security/infrastructure/ tourism facilities)
- Strengthening marketing and promotion function
- Capacity expansion of Human Resource Development
- Local government participation, and
- Public private co-ordination.

2. Improvement of Tourism Administration of MOTW

(1) Restructure the Organisation

- Upgrade the Planning Unit to Research and Planning Department
- Establish a Research and Statistics Section in the Research and Planning Department
- Transfer overseas tourist offices to the proposed Tourist Board
- Establish tourism support development from the existing licensing section
- Establish regional tourist offices of MOTW.

3. Actions to be Taken by Tourism Related Agencies

Actions to be taken by the governmental agencies are proposed as follows:

(1) Environmental Conservation

- Carry out a study on national land-use as a precondition to establishment of a national Land Use Act.
- Establish Land Use Act in order to identify the development area and conservation area covering the whole nation. Four land use categories are proposed. They are Conservation area, Pastoral area, Agricultural area and Urban area (Office of President, Ministry of Land, Ministry of Natural Resources and Environment, Ministry of Agriculture).
- Gazette the Tourism Promotion Zones (TPZ) and Buffer zones. TPZ are designated for development guiding area and Buffer zones are designated for conservation by land use monitoring (Office of President, MOTW, Ministry of Agriculture).
- Promote to implement the "Protected Areas and Wildlife Service Project" (PAWS) by KWS in cooperation with IDA and foreign aid agencies.
- Implement community wildlife programmes by KWS in co-operation with the local government and local community.
- Establish EIA system and pollution control programme (Ministry of Environment and Natural Resources).

(2) Improvement of Travel Conditions

- Implement the development of new tourism products. They are introduction of new mountain resort, utilisation of historical and cultural resources, development of alternative wildlife viewing destinations (MOTW, MOCSS, MOPW, MOHANH, Private).
- Expand and improve existing tourist's base (Coast, Nairobi, Rift Valley lakes).
- Develop new tourism bases (TPZ).
- Improve national road and access roads for traffic safety. Enforcement of traffic control is also needed (MOPWH, Office of President).
- Provide guide signs, information boards and tourist information centres at tourist areas.
- Improve infrastructure relating to the tourism sector (see next section).

(3) Strengthening Marketing Function

- Establish the Tourist Board as a joint organisation of MOTW and the private sector.
- Manage overseas tourist offices by the Tourist Board
- Establish tourism information system and provide appropriate information to travellers and the travel trade (MOTW, local governments, local tourism organisations).

(4) Capacity Expansion of Human Resource Development

- Introduce apprentice system and part time courses for personnel training and establish certification and licensing system for personnel skill development for all the levels (MOTW, MORTTT, MOE, the travel trade, private institutes).
- Expand training capacity of Kenya Utali Collage
- Establish new food production and service course at the Technical Training Institutes.
- Establish a second college for training of personal for the tourism industry at coast (Kilifi District).

(5) Local Participation

- Establish Tourism Development Bank for financing SME in TPZ.
- Establish tourism section or unit in local government.
- Promote establishment of local tourism organisations attached to local government or as private-public sector co-operations.
- Form "TPZ Development Committee" in designated tourism promotion zones.
- Strengthen KTDC to take development activities in TPZ.

(6) Public and Private Co-ordination

- Form Tourism Council to advice tourism policy for tourism development to the decision making level.
- Establish the Tourist Board responsible for the marketing of Kenyan tourism (MOTW and travel trade).
- Establish Tourist Information Centres at the gateway and centres of tourist's base (MOTW, local governments, local tourism organisations).
- Set standard and programme for personnel training in private sector in conjunction with certification and licensing system. Apprentice system should be introduced for all levels of training.

4. Facility Development Plan

4.1. Selection Criteria

Facility development projects listed in the present Five-year Action Programme were selected based on the following criteria.

(1) Public Sector Projects

From among many facility development projects, public sector projects were selected, while private sector projects like hotel building and marina construction be promoted under the initiative of private capital. Public sector investments will pave the way for the tourism development under the private sector initiative.

(2) Priority Tourism Development Areas

In the course of the present study, three (3) Priority Tourism Regions were selected within which seven (7) Priority Tourism Development Areas were further selected. As for the facility development, the Action Programme focuses on these seven (7) PTDA's.

(3) Public Participation

Based on the role and function of public sector investment, the Action Programme aims at tourism product development by public participation. Along this line, public facilities, such as museums and visitor facility developments have priority in the Action Programme.

(4) Urgency

Despite the criteria (2) mentioned above, those projects which are not located in the seven (7) PTDA's, but which are urgently required from the point of view of supporting the tourism development, were included in the Action Programme. The railway improvement and airport improvement projects, though excluded from the investment requirement in monetary terms, were listed in the Action Programme.

(5) Implementable Projects

Projects taken up in the Action Programme were assessed from the point of view of financial and institutional capabilities.

4.2. List of Projects

Projects selected according to the above mentioned criteria are listed below. All the projects listed are scheduled to start in the Five-Year Action Programme Period and are classified into two categories :

- Projects scheduled to be completed by 2000, and
- Projects scheduled to be completed after 2001.

Table 9.1 Projects for Five-Year Action Programme 1996-2000 (1/2)

No.	Project Name	Description	Complete before 2000	Complete after 2001
1 Central Tourism Region				
Tourism Product Related Facilities				
1	Improvement of National Museum	Expansion of Exhibition Hall	X	
2	Devt. of Nyeri District Museum	New Construction	X	
Tourist Service Facilities				
1	Tourist Service Facilities	Information Centres, Wayside	X	X
Human Resource Development				
1	KUC Expansion	Expansion of Facilities (Nairobi)	X	
2	Improvement of Catering Training Course	Improvement of Nairobi and Nkabure Technical Training Institute	X	
3	Expansion of KWS Training Programme	New Course in Naivasha or Voi	X	
Transport				
1	Access Road to Mt. Kenya TPZ	15 km	X	
Water Supply				
1	Karen Town Community	Incremental Capacity : 1,052 m ³ /d	X	
2	South Limuru Community	Incremental Capacity : 722 m ³ /d	X	
Sewerage				
1	Karen Town Community	Sewered Area : 35 ha		X
2	South Limuru Community	Sewered Area : 60 ha		X
Waste Disposal				
1	South Limuru Community	Incremental Capacity : 3.6 m ³ /d		X
Power Supply				
1	11 kV D/L (Naro Moru)	13 km Distribution Line	X	

Source: JICA Study Team

Table 9.1 Projects for Five-Year Action Programme 1996-2000 (2/2)

No.	Project Name	Description	Complete before 2000	Complete after 2001
2 Western Tourism Region				
Tourism Product Related Facilities				
1	Devt. of Baringo District	New Construction	X	
Tourist Service Facilities				
1	Tourist Service Facilities	Information Centres, Wayside facilities, Tourists service facilities	X	X
Human Resource Development				
2	Improvement of Catering Training	Improvement of Kitale Technical	X	
Transport				
	Access Improvmt to Mt Elgon	15 km	X	
Water Supply				
1	Mt. Elgon Community	Incremental Capacity : 388 m3/d	X	
2	Lake Baringo Community	Incremental Capacity : 980 m3/d		X
Sewerage				
1	Mt. Elgon Community	Sewered Area : 9 ha		X
2	Lake Baringo Community	Sewered Area : 33 ha		X
Waste Disposal				
1	Lake Baringo Community	Incremental Capacity : 5.5 m3/d	X	
Power Supply				
1	33 kV D/L (Kitale/Mt. Elgon)	90 km Distribution Line	X	
2	33 kV D/L (Lake Baringo)	60 km Distribution Line	X	
3 Coastal Tourism Region				
Tourism Product Related Facilities				
1	Devt. of Mombasa Aquarium	Aquarium with Study Institute	X	
2	Swahili Seafood Distribution	Ice Supply Terminals and Market Information Centre	X	
Tourist Service Facilities				
1	Tourist Service Facilities	Information Centres, Wayside facilities, Tourists service facilities	X	X
Human Resource Development				
1	Improvement of Catering Training Course	Improvement of Mombasa Technical Training Institute	X	
Transport				
1	Lamu A/S Pavem't Rehabil.	1.6 ha	X	
2	Moi Int'l A/P Access Improvmt	5 km	X	
3	Access to South Diani TPZ	10 km	X	
4	Access to Watamu TPZ	12 km	X	
Water Supply				
1	Shimoni Community	Incremental Capacity : 1,158 m3/d		X
2	Funzi Bay Community	Incremental Capacity : 273 m3/d		X
3	South Diani Community	Incremental Capacity : 3,800 m3/d	X	
4	Gazi Bay Community	Incremental Capacity : 525 m3/d	X	
5	North Mamburui Community	Incremental Capacity : 614 m3/d		X
6	Watamu Enlargement	Incremental Capacity : 700 m3/d	X	
7	North Watamu Enlargement	Incremental Capacity : 700 m3/d		X
8	West Lamu Community	Incremental Capacity : 301 m3/d	X	
Sewerage				
1	Shimoni Community	Sewered Area : 43 ha		X
2	South Diani Community	Sewered Area : 160 ha	X	
3	Gazi Bay Community	Sewered Area : 18 ha	X	
4	North Mamburui Community	Sewered Area : 25 ha		X
5	Watamu Enlargement	Treatment Plant with Capacity of 800 m3/d	X	
6	West Lamu Community	Sewered Area : 10 ha		X
Waste Disposal				
1	Shimoni Community	Incremental Capacity : 6.4 m3/d	X	
2	South Diani Community	Incremental Capacity : 11.8 m3/d	X	
3	North Mamburui Community	Incremental Capacity : 3.4 m3/d	X	
4	Watamu Enlargement	Incremental Capacity : 4.8 m3/d	X	
5	North Watamu Enlargement	Incremental Capacity : 3.4 m3/d	X	
Power Supply				
1	132 kV T/L (Kilifi/Malindi)	50 km Transmission Line and 1 New Substation	X	
4 National				
Transport				
1	Railway Track Improvement	1,195 km		X
2	Car Renovation	18 cars	X	

Source: JICA Study Team

4.3. Investment Schedule

The investment schedule up to the year 2000 of priority projects listed in the preceding sub-section is as summarised hereunder.

Table 9.2 Investment Schedule 1996-2000

		Unit: K£ million					
Sector	Agency in charge	1996	1997	1998	1999	2000	
1. Tourism Product related Facilities	MOTW,	17.7	17.7	17.7	17.7	17.7	88.3
2. Tourist Service Facilities	MOTW, MOCSS	1.1	1.1	1.1	1.1	1.1	5.4
3. Road	MOPWH	0.3	0.6	1.5	1.8	1.8	6.0
4. Railway	MOTC, KR	(5.3)	(10.6)	(26.6)	(31.9)	(31.9)	106.3
5. Airport	MOTC, KAA	0.1	0.3	0.6	0.8	0.8	2.5
6. Water Supply	MOLRRWD, NWPC	1.4	5.1	9.5	7.7	7.3	30.9
7. Sewerage & Waste Disposal	MOPWH, Local Gov't	0.5	0.9	3.1	4.5	4.7	13.6
8. Power & Telecommunication	MOE, KLPC, KPTC	0.8	0.8	2.3	2.3	1.6	7.8
9. Human Resources Developm't	MOTW, MORTT	4.1	12.2	16.1	9.0	7.5	49.0
Total		25.9	38.6	51.9	44.8	42.3	203.5
		(31.3)	(49.2)	(78.4)	(76.7)	(74.2)	(309.8)

Note: At 1994 constant price
Source: JICA Study Team

Agencies in charge in the table may be subject to change. Years shown in the table are also indicative and may be brought forward according to the preparation for implementation.

The scheduled investment amounts to K£ 203.5 million in total for the five-year plan period. The improvement of railway track and purchase of cars would require a big and long-term investment. Since such an investment of the railway sector, though it is a precondition for the Safari Train, relates to the whole social and economic sectors, it is not included in the investment requirement of the Master Plan. The figures in parentheses are shown for references' sake only. But the absolute total for figure in parentheses is different from entire in the slung/rows?

In other sectors than railway as well, there are many infrastructure investments, which are related to all economic sectors. These are excluded from the present Master Plan, which includes those investments directly related to the tourism sector. In such sectors, however, as water supply, sewerage and waste disposal, power and communication, some local demand can be met by projects included in the Master Plan. This is because a major demand of these projects is

composed of tourist demand. Road projects are mainly composed of improvements of access road leading to national parks and reserves as well.

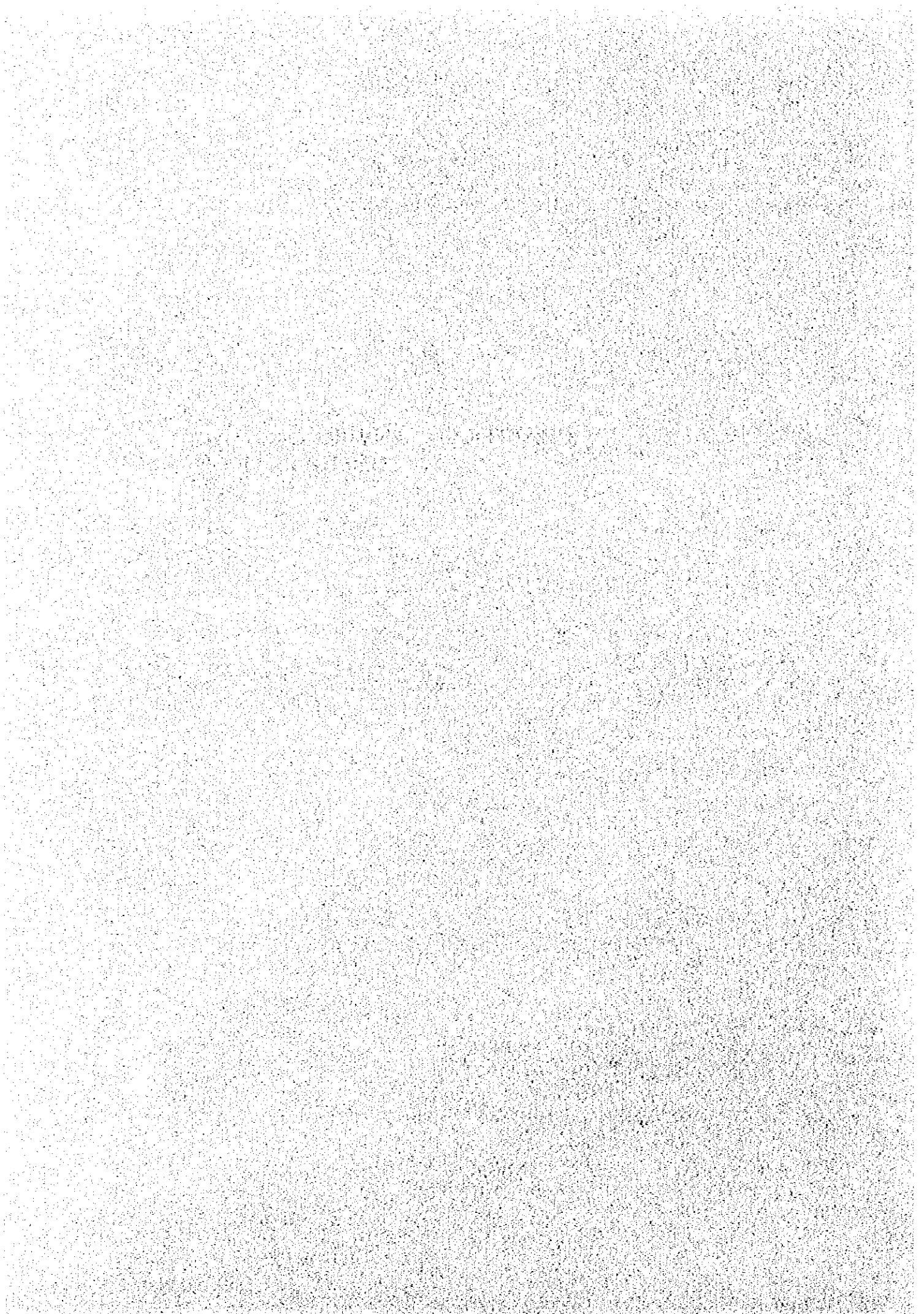
Apart from the infrastructure development, the investments to increase the attractiveness of Kenya's tourism resources are focused in the Action Programme. The facility investment related to tourism products include the improvement of various museums, improvement of national parks and reserves, introduction of Rail Safari and development of resorts. Although this is the biggest sector in terms of investment requirement in the Action Programme, a detailed schedule for implementation needs to be determined by the agency in charge.

Human resources development is another area of non-infrastructure development urgently needed for expansion. Since education and training takes a long time before it bears fruits, no time should be lost before starting to reinforce training facilities.

In this five-year period, nearly 70% of total investment is concentrated in the latter three years and the lesser investment is scheduled in the first two years during which preparatory machinery's related to institution and management for the implementation of the Tourism Master Plan will be established.

When this investment requirement is compared with the Public Investment Programme 1994-1996, the average annual investment requirement of five (5) tourism-related sectors such as tourism and wildlife, transport and communication, public works and housing, energy and research and training in the PIP amounts to K£ 520 million, while that of the Tourism Master Plan is computed at K£ 41 million. This corresponds to 8% of the average annual investment into the said five (5) sectors. This low percentage indicates that the investment schedule of the Five-Year Action Programme may be implementable .

**CHAPTER 10 ENVIRONMENTAL
CONSIDERATIONS**



Chapter 10 Environmental Considerations

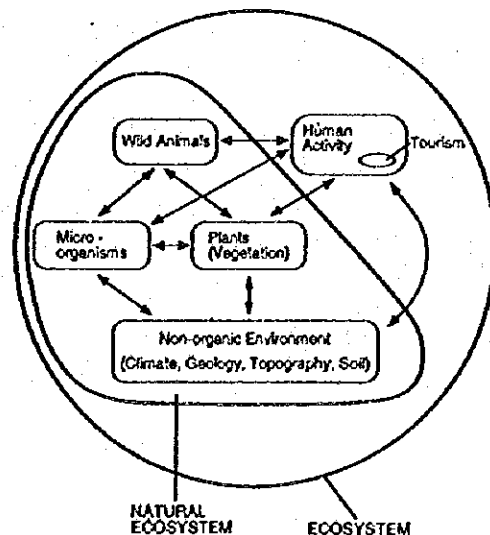
1. Recognition on Ecosystem in Kenya

1.1. General

An ecosystem consists basically of the close interrelationship of the natural ecosystem and human activity with their well-balanced dynamics (Figure 10. 1 refers).

A natural ecosystem includes the non-organic environment (climate, geology, topography, soil and so on), plants (vegetation), wild animals and micro-organisms. The non-organic environment is an indispensable factor in a natural ecosystem, as it provides the basic requirements for forming a biosphere. Plants, which are producers in a natural ecosystem, are dependent on the non-organic environment. Wild animals, which are consumers, are dependent on plants, either directly or through a food chain, in which carnivores eat herbivores. Also, micro-organisms play partly a role as decomposers to connect between the non-organic environment and a biosphere.

Figure 10. 1 Concept of Ecosystem



Human activity is based on the natural ecosystem. Tourism is one of the human activities and Kenya's tourism, particularly wildlife safari, is related closely to the natural ecosystem. It is therefore not exaggerated to say that considering tourism in Kenya means considering her natural ecosystem. Conservation of the natural ecosystem is the most important aspect of Kenya's tourism development, as well as sustainable use of her natural resources.

Volume 3 discusses more details of the existing natural environment conditions, and environmental conservation and management plans.

1.2. Characteristics of Kenya's Natural Ecosystem

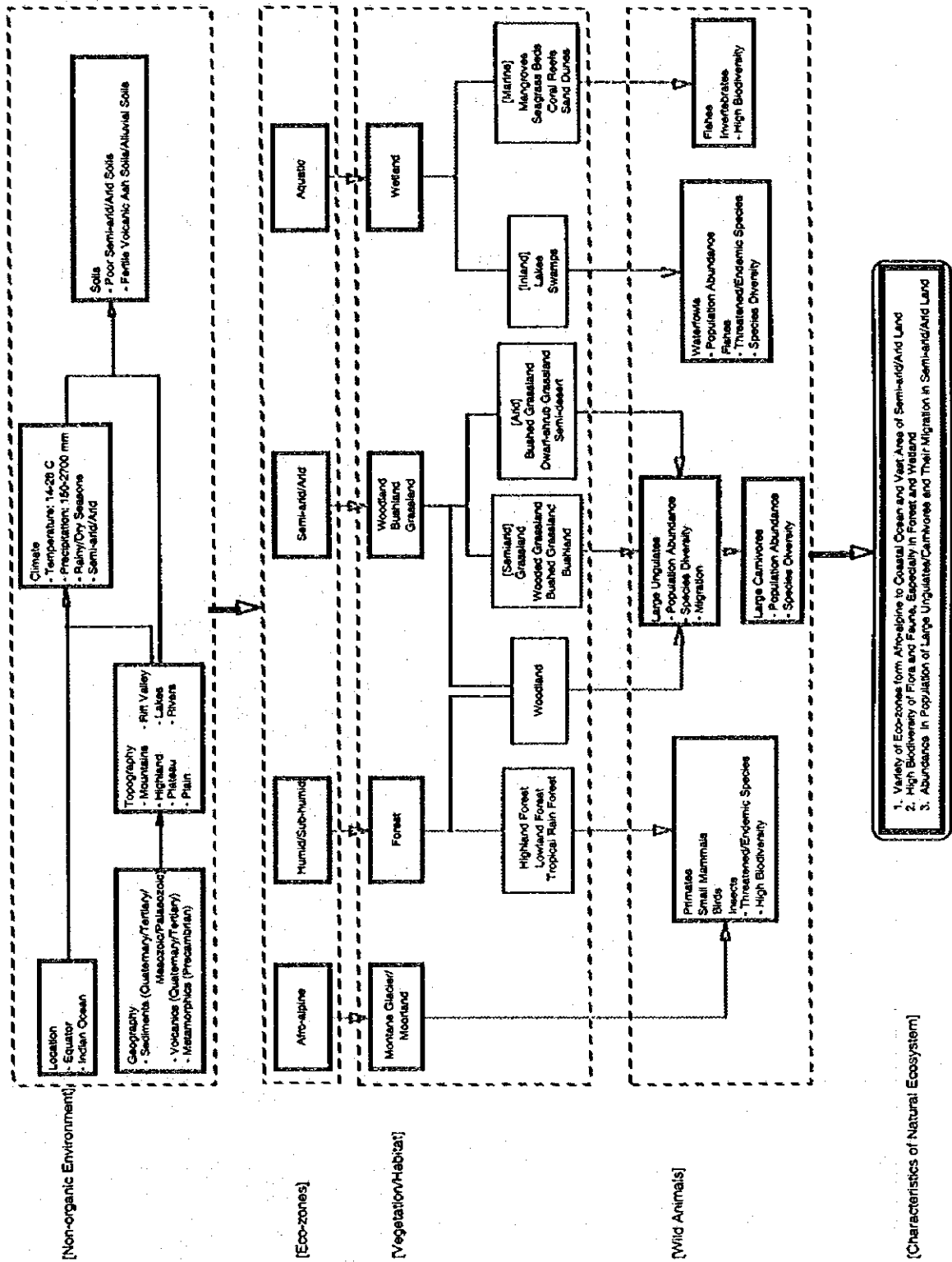
The characteristics of Kenya's natural ecosystem with respect to the components of non-organic environment, plants (vegetation) and wild animals are shown in Figure 10. 2 and summarised as follows :

- There is a variety of eco-zones, ranging from Afro-alpine to coastal ocean and a vast area of arid/semi-arid land
- There is a high level of biodiversity of flora and fauna, especially in forest and wetland, and
- There is an abundance in population of large ungulates/carnivores and their migration in arid/semi-arid land.

The ecological zones, which represent the regional types of natural ecosystem, are determined based on the agro-climatic zones with the distribution of vegetation and wild animals. The ecological zones are classified into four zones that is I to IV. The zones II and III are the bushland/grassland zones and they are mainly distributed in arid/semi-arid land in the Northern plain land and the Southern to Eastern plateau/lowland, which occupies about 88% of the whole land. The zones I and IV are the forest zone. They are distributed in humid/sub-humid land in the central to Western highland and the coast, including the Indian Ocean.

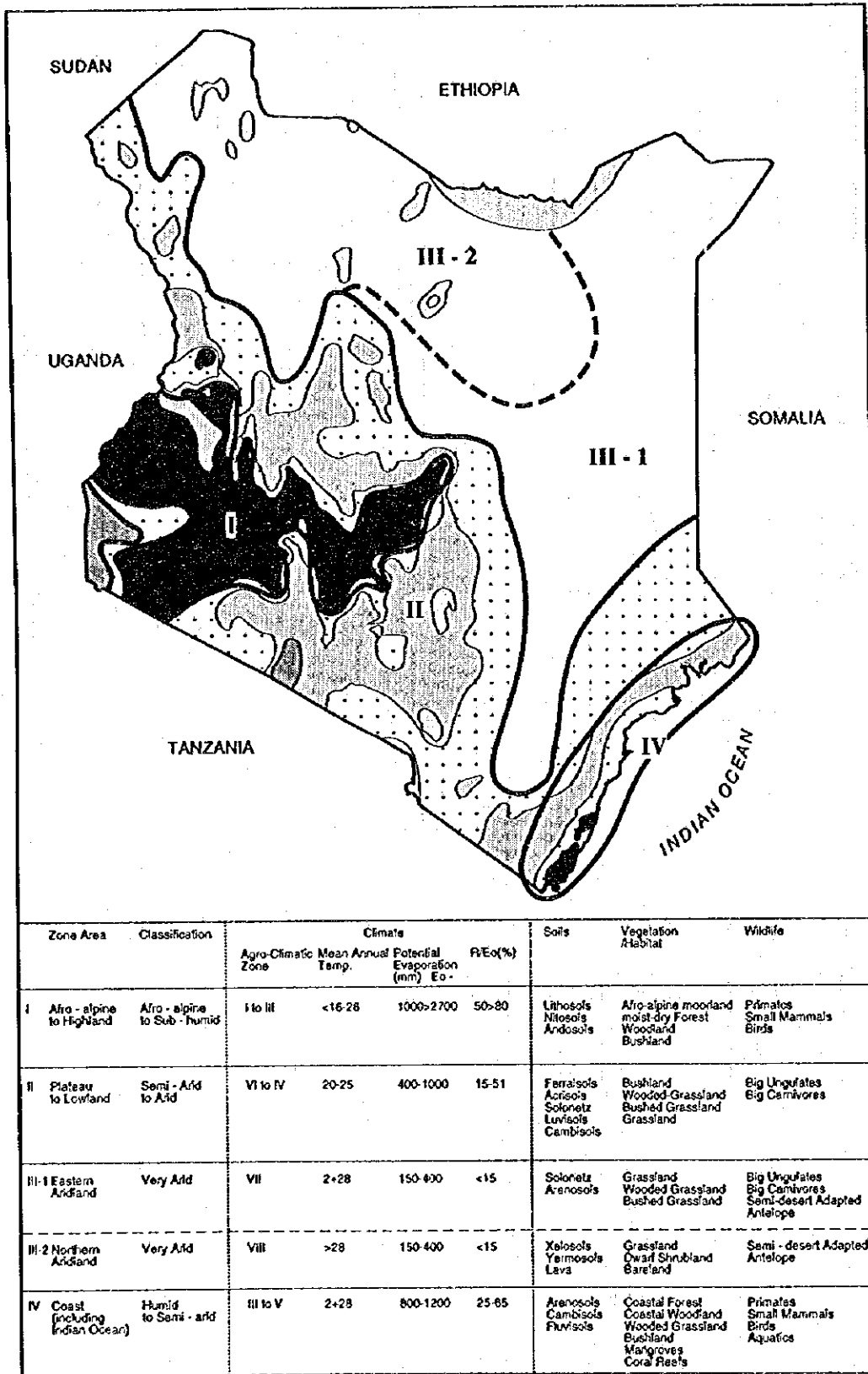
The characteristics and simplified distribution of the ecological zones are shown in Figure 10.3.

Figure 10.2 Characteristics of Kenya's Natural Ecosystem



Source: JICA Study Team

Figure 10.3 Ecological Zones in Kenya



Source: JICA Study Team

2. Roles of Tourism Development for Environmental Conservation

Tourism industry is a good example for the non-consumptive use of natural resources and the optimum long-term land use without serious damage to the natural environment. It also contributes to the country's sustainable development from both, ecological and economic points of view. Tourism development which uses the natural environment and resources has to have some advantage of environmental conservation. The roles of tourism development for environmental conservation in Kenya are as follows:

- Increase revenues for environmental conservation,
- Minimise environmental impacts caused by uncontrolled tourism development and operation,
- Generate local people's understanding and support for environmental conservation, and,
- Increase national/international understanding and support for Kenya's environmental conservation.

3. Environmental Endurance for Tourism Development

The relative environmental endurance including restoration for the tourism development in each ecological zone is shown in Table 10. 1.

Table 10. 1 Environmental Endurance for Tourism Development in Ecological Zones

Zone Areas		Primary Productivity	Biodiversity	Environmental Endurance for Development
I	Afro-alpine to Highland	Very low to high	High	Low in Afro-alpine to medium in forest
II	Plateau to Lowland	Low to medium	Medium	Low
III-1	Eastern Arid Land	Very low	Low	Very low
III-2	Northern Arid Land	Very low	Low	Very low
IV	Coast (incl. Indian Ocean)	Medium to high	High	Low in coastal wetland to medium in forest

Note: The development assumed here is small-scale development regarding both time and space.

Source: JICA Study Team

Basically, no development activities can be carried out without influencing the natural environment. All of the ecological zones have little environmental endurance against large-scale development, which causes topographical changes, such as clear felling, irrigation and reclamation works and dam construction. It will take very long time, or might be impossible, to restore an original natural environment including biodiversity to a degree, which it had before the development occurred.

On the other hand, small-scale development, such as selective logging, traditional farming and fishing and small house construction, has a smaller impact on the natural environment than large-scale development. Tourism development can conform to this kind of development in most of the cases. For example, the zone III, which is classified as a very arid area, has very low primary productivity of plants with low biodiversity, and can thus be evaluated as having very low environmental endurance. In the same manner, the zone I except Afro-alpine, which is classified as a humid to sub-humid area, has high primary productivity with high biodiversity in forests, and can thus be evaluated as having relatively medium endurance.

However, it is considered that the environmental endurance for tourism development may depend on the scale of the development, visitor numbers in relation to carrying capacity and environmental management measures to be taken. For example, the zone I, which has medium environmental endurance in forests, can be regarded as having very low endurance in case of over-use by tourism beyond its carrying capacity or inappropriate management of the development.

4. Basic Concept of Tourism Impacts

Compared to natural disasters (such as drought, flood and bush fire) and other human activities (such as agriculture, pastoralism and industrialisation), tourism development has, in general, a smaller negative impact on the natural environment. However, being carried out without proper management, regulations and directions, tourism development can also easily have or enhance the influence on both, the natural ecosystem and human activity at local or regional levels.

Tourism-related problems will contribute to the deterioration of the natural environment and tourism resources, such as wildlife, their habitats and landscape. It may happen that wild animals are driven away from NPs and NRs to the outside and that animal watching becomes difficult. Such problems would reduce visitor's satisfaction and result in decreasing numbers of visitors in the future.

On the other hand, excessive tourism development over a short time span may lead to rapid increase in economic benefits and opportunities for local people to see and meet with foreign visitors. There is, however, a potential threat that such development radically changes their life styles and spoils their traditional societies and cultures. There are also worries that poaching, fishing, collecting pressure and encroachment into NPs and NRs will increase, as the number of agricultural settlers increase around NPs and NRs.

Basically, one should develop the tourism industry without creating damage to main characteristics of Kenya's natural ecosystem, which are a variety of eco-zones, a high level of biodiversity and an abundance in population of large ungulates and carnivores with their migration.

5. Tourism Problems Caused in the Natural Environment

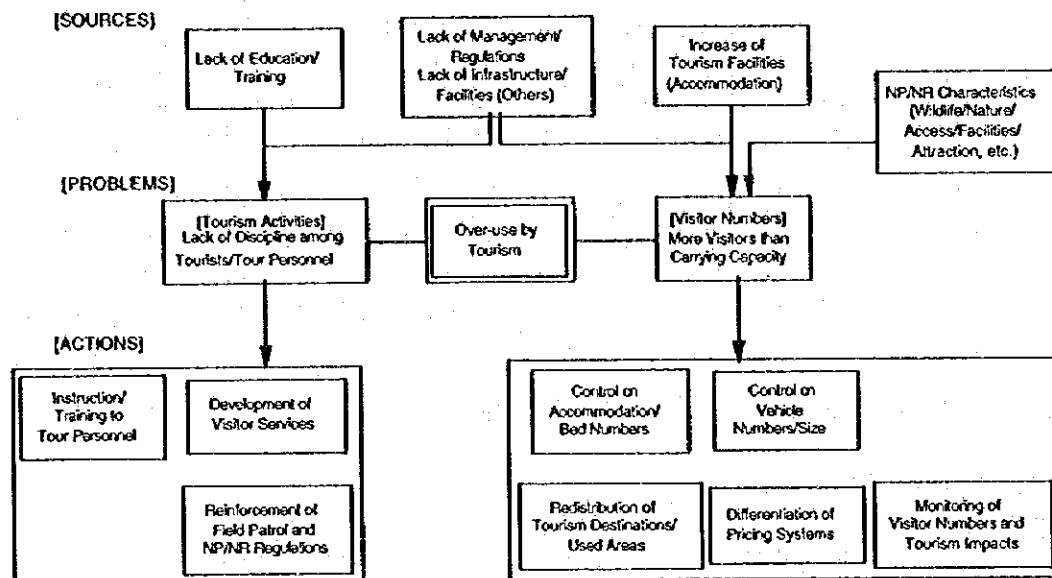
5.1. Tourism Problems

Tourism-related problems are conspicuous in popular NPs and NRs (Amboseli NP, Lake Nakuru NP, Masai Mara NR, Samburu NR) and parts of the coastal area. These areas, including future proposed nature-based tourism areas, are covered in this section. Tourism problems in these areas can be categorised for practical reasons into two categories, namely common and specific problems.

5.1.1. Common Problems

There are basically two common problems, that is, firstly, more visitors than the area's carrying capacity and, secondly, lack of discipline among tourists and tour personnel as shown in Figure 10. 4. Over-use by tourism appears as a result of a combination of these problems and it facilitates various specific problems to become evident and even critical. Over-use by tourism simply means that the number of visitors and tourism activities overstretch the area's carrying capacity. Such capacity is basically determined by its environmental features, but it can be influenced and altered by the kind of tourism activities, conditions of infrastructure and facilities and by management and regulations.

Figure 10.4 Proposed Actions for Common Problems by Tourism Development in Relation to Over-use by Tourism



Source: JICA Study Team

5.1.2. Specific Problems

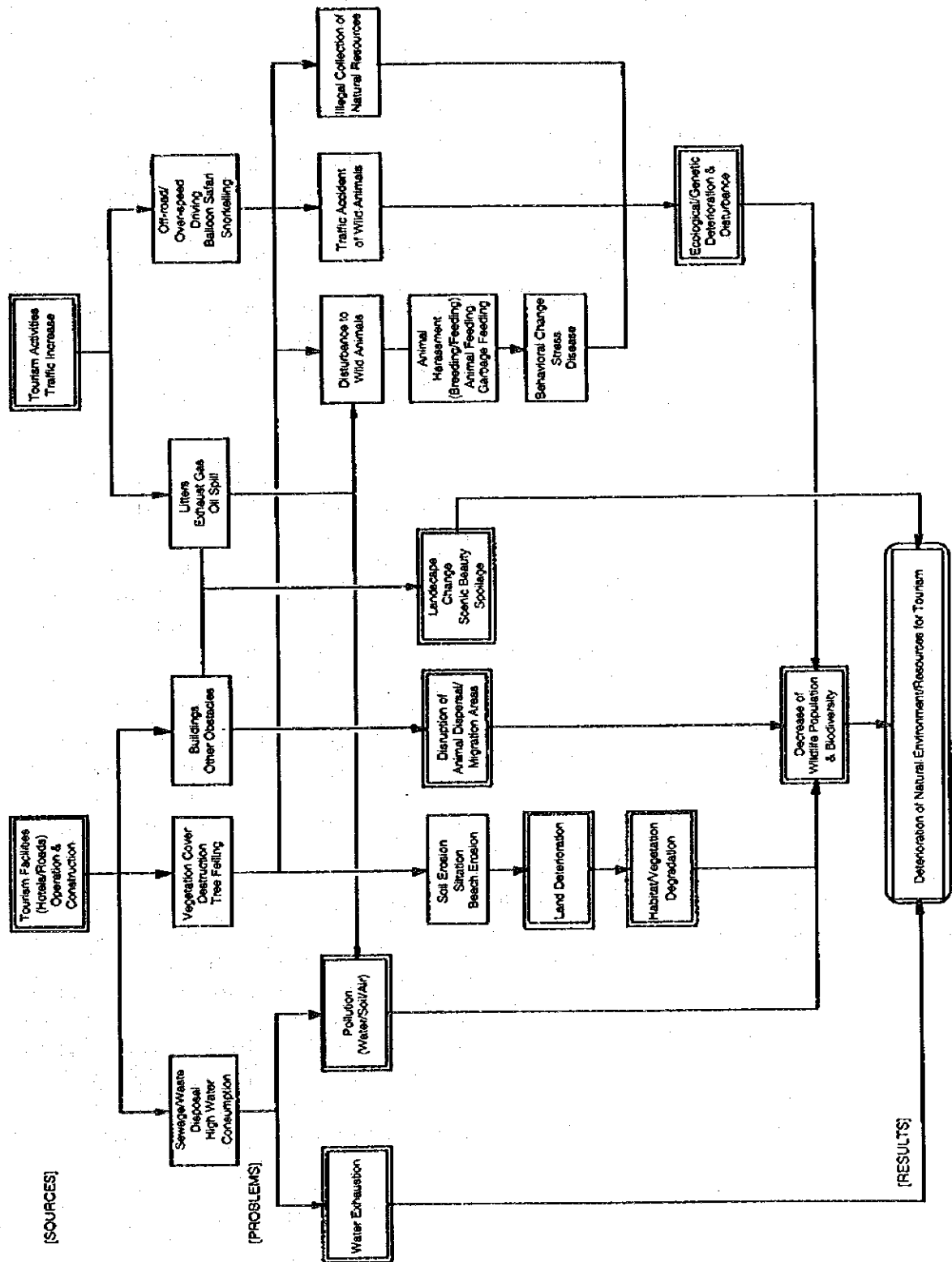
The possible specific problems that can be caused by tourism development are shown in Figure 10. 5. There are two main factors that cause various environmental problems. They are:

- Construction and operation of tourism facilities, such as hotels and roads, and
- Tourism activities and increase in traffic volume.

(1) Construction and Operation of Tourism Facilities

As for the construction of tourism facilities, vegetation at the building sites will be directly destroyed, sometimes causing soil erosion. It is also to be expected that the construction, particularly of roads, may disrupt wildlife dispersal and migration areas. As for the operation of tourism facilities, environmental pollution, especially water pollution, occurs if the volume of sewage and waste exceeds the treatment capacity of the facilities. Tourism facilities by themselves and litter scattered by tourists can spoil the scenic beauty of the natural landscape. Water exhaustion, due to high water consumption by the facilities, is a severe problem particularly in the coast (Mombasa, Lamu).

Figure 10.5 Specific Problems Caused by Tourism Development



Source: JICA Study Team

(2) Tourism Activities and Increase in Traffic Volume

Tourism activities and the increase in traffic volume contribute mainly to ecological deterioration and disturbance of wildlife and their habitats. Off-road driving is a critical problem in some popular NPs and NRs, in which proper tourism management is not yet implemented. It damages the vegetation cover by trampling grasses and shrubs on the ground, causing the degradation of wildlife habitats, animal harassment as well as aesthetic degradation. Such illegal driving is sometimes forced due to bad road conditions, but in most cases it occurs in search of popular animals by tour drivers, who want to grant the tourist's requests to see those animals. Balloon safari is available in Masai Mara NR and it is regarded as one of the most valuable tourism attractions. However, it often causes off-road driving by vehicles accompanying the balloon, and noise from the burner to blow hot air into the balloon and low flight height may disturb wild animals from the air.

Attractive animals, namely large carnivores (such as lion, cheetah, leopard) and rhinos, are frequently harassed being surrounded or followed by tourist vehicles, which affects their breeding and feeding behaviour, interference on mating, hunting, moving and resting. In the case of sea turtles, their breeding is sometimes disturbed through watching activities by tourists, trampling the breeding sites on sand beaches and lighting from hotels during night time. Tourists are fond of feeding animals and some lodges set up feeding places for animals (leopard, crocodile) as a kind of attraction. Some animals (elephant, hyenas, baboons) feed on garbage from garbage-pits at lodges and camping sites. Both activities can also change their feeding behaviour and may cause diseases such as indigestion, abiotrophy and poisoning. Furthermore, tamed animals are sometimes dangerous and may do harm to tourists or tour personnel.

Increase of traffic waste, such as exhaust gas and oil spills, cause air, soil and water pollution. Increase of traffic because of road expansion and over-speed driving may increase traffic accidents with wild animals, including road kill by vehicles and mid-air kill by airplanes. In the coastal ocean area, operation and anchorage of tourist boats and snorkeling by tourists can strike or trample part of the corals. These activities as well as the illegal collection of marine creatures (coral stones, shells) by tourists and water pollution by tourism facilities can enhance the degradation of the coral reef ecosystem.

6. Countermeasures for Tourism Problems

This chapter provides some environmental guidelines, which aim at minimising negative environmental impacts from tourism development and achieving a balance between environmental conservation and tourism development. Tourism development in ecologically important or well-preserved areas must be carried out with the greatest care.

An Environmental Impact Assessment (EIA) must be carried out before any kind of tourism development activity is implemented. Generally speaking, it should be avoided as much as possible that tourism development alters the natural landscape. Once construction of tourism facilities are planned, sewerage and waste disposal systems with a high standard should be installed as countermeasures for minimising environmental pollution.

The following programmes are therefore proposed :

- Programme for the mitigation of tourism impacts on the natural environment, and
- Pollution control programme.

6.1. Programme for the Mitigation of Tourism Impacts on the Natural Environment

As has been discussed in Section 5, problems are divided into two broad categories, namely common problems and specific problems. The following sections propose possible countermeasures for each problem category.

6.1.1. Proposed Actions to Counter Common Problems

Controlling the number of visitors and encouraging discipline among tourists and tour personnel are proposed in the context of common problems (Figure 9.4 refers).

(1) Controlling the Number of Visitors

The problem of too many visitors result mainly from increase in tourist accommodations, which in turn is influenced by several characteristics of NPs and NRs. In other words, the visitor numbers are directly affected by the capacity of the tourist facility to accommodate visitors. Thus, visitor numbers can be controlled directly by limiting the construction of accommodation facilities. New tourist accommodation should not be constructed within and/or even adjacent to NPs and NRs in which over-use is already being observed.

However, such measures as directly controlling visitor numbers is effective to restrain the further over-use, but they cannot fundamentally solve the present over-use. It may also be difficult to take such action, because the local governments and private land owners wish to construct new accommodation facilities in order to increase their earnings. Indirect control of visitor numbers should therefore be encouraged at the same time. This could be done by redistributing tourism destinations or used areas. Tourists will hence be given opportunities to choose a destination by themselves, taking several tourism conditions into consideration. The differentiation in the pricing system would have an immediate effect in this regard. It is therefore recommended to fine-tune such measures in line with the results of the "KWS Tourism Pricing and Development Study", which is presently prepared with ODA assistance.

a. Direct Control

- Control of the number of beds for tourist accommodation or its construction within/adjacent to NPs and NRs, in negotiations with the local governments and private land owners, and
- Control of the number and size of vehicles entering NRs and NRs at the entrance gates, in negotiations with the local governments and tour companies.

b. Indirect Control

- Redistribute tourism destinations away from major to minor NPs and NRs by development of infrastructure and, facilities, diversification of tourism products, promotion with effective advertisement, protection of key animals for tourism and maintenance of security
- Redistribute tourism-used areas within NPs and NRs by zoning for use purposes, regulation on accommodation sites and access roads and careful expansion of road networks in under-used areas
- Adopt differential pricing systems for the entry fees of NPs and NRs and the zones to be established inside NPs and NRs, that is high pricing for the popular NPs and NRs or over-used areas and low pricing for the developing/under-developed NPs and NRs or under-used areas (for details refer to Table 6.1 in Volume 3), and
- Monitor visitor numbers and tourism impacts on the natural environment (as well as the socio-cultural and economic features) to estimate the carrying capacity and indicate the suitable visitor number for each NP and NR.

(2) Encouraging Discipline among Tourists and Tour Personnel

The problem of lack of discipline derives mainly from insufficient understanding of wildlife, ecosystems, NPs and NRs among tourists and tour personnel. This is reflected in insufficient visitor education and tour personnel training. Development of visitor services and tour personnel training and instruction is the most effective solution for this and also other specific problems related to tourism activities. Such education is both, a long-term as well as low-cost measure.

- Develop visitor services, such as education, information and interpretation services. This may include, but not be limited to the preparation of pamphlets, maps and notice boards in major languages (Swahili, English, Italian, German, Spanish, French), which are supplied to tourists at Information Centres in each NP and NR and other tourism facilities
- Train and instruct tour personnel, such as tour operators, drivers, guides and lodge operators and introduce a kind of license system for certain tourism activities, including grades, certificates and penalties
- Improve and establish facilities concerning education and training, such as Information Centres in all NPs and NRs, Visitor Centres, Environmental Education Centres and Training Institutes/Schools
- Reinforce field patrol for tourists' and tour personnels' activities by KWS as well as County Council staff, and
- Reinforce NP and NR regulations by imposing penalties on illegal tourists' and tour personnels' activities.

6.1.2. Proposed Actions to Counter Specific Problems

In addition to the measures proposed above, several measures are proposed to tackle each currently prevailing specific problem, such as :

- Facility and road construction
- Litter, sewage and waste disposal
- Off road and over-speed driving
- Balloon safari
- Disturbance of wild animals, and
- Destruction of coral reefs.

(1) Facility and Road Construction

The construction of tourism facilities and roads can cause degradation of the vegetation and habitats and may disrupt wildlife dispersal and migration areas. The same holds true for the increase of other human activities with settlements outside of NPs and NRs. There is therefore a need to plan carefully the construction sites, scales and methods, taking into consideration characteristics of the natural environment; and to carry out construction works only after implementation of the EIA. The individual measures are:

- Implement the EIA under KWS guidelines before construction of any tourism facilities and roads
- Avoid that construction works change adversely the natural landscape and rather adopt to make good use of the natural landscape
- Avoid to construct buildings on slopes and keep a proper distance from water resources and the coastal shoreline to the construction sites
- Prohibit felling of indigenous trees for construction works and replant trees in the case, in which felling of exotic trees is unavoidable
- Examine measures to prevent traffic accidents with wild animals on roads, and
- Supervise facility development in accordance with facility development guidelines as mentioned in Chapter 6 of Volume 1.

(2) Litter, Sewage and Waste Disposal

Litter, sewage and waste are produced by tourists and the operation of tourism facilities causing water pollution, aesthetic degradation and some kind of animal disturbance. A solution for this problem is clear and relatively simple, that is instalment of adequate disposal facilities with full treatment capacity at tourism facilities, including their proper operation. The individual measures are:

- Install and maintain litter-bins, garbage-pits, incinerators and composts at lodges and camping sites
- Install and maintain sewerage systems with septic tanks and soak pits at lodges and camping sites, especially toilets at camping sites
- Provide tax incentives for the instalment of disposal facilities acceptable to KWS standards, and

- Reinforce regulations on sewage and waste disposal and monitor operation conditions of the disposal facilities and water quality in effluent from lodges and camping sites.

(3) Off-road and Over-speed Driving

The main environmental impact caused by off-road driving is degradation of vegetation and habitats, followed by animal harassment and aesthetic degradation. Over-speed driving causes animal harassment and road kill. These activities are legally prohibited in NPs and NRs.

There is no reason to allow or tolerate such illegal activities in NPs and NRs and thus, in principle, off-road driving must be continuously prohibited inside all NPs and NRs. They should be completely prevented by proper maintenance of the road network, reinforcement of patrols and development of visitor's education and tour personnel training.

However, it may prove to be practically very difficult to stop completely off-road driving, since many tourists want to watch wild animals from a close-up point. Intensive patrolling by KWS may put a heavy expenditure burden on KWS. A less rigid approach may therefore be to tentatively permit off-road driving within established designated special areas, system and regulations.

Adopting this option on an exceptional basis may contribute to decreasing off-road-driving in other areas. In such a case, close monitoring of vegetation damage would be required, in order to determine the limit, which vegetation is restorable over a short period.

In line with the above discussion, proposed measures for the overall prohibition and/or the tentative permission of off-road driving are as follows:

a. Overall Prohibition

- Develop visitor education and tour personnel training and reinforce patrols for off-road and/or over-speed driving
- Physically prevent the illegal driving by new road designs and construction methods, such as all-weather gravel roads with side ditches and suitable curved lines.
- Maintain and carefully expand the road network with effective signposts in under-used areas within NPs and NRs and close illegal roads made by off-road driving with physical blocks and warning signs, and

- Diversify tourism products from the present major game viewing with vehicles to other attractions, such as walking safari, camel/horse safari and fixed-point observation.

b. Tentative Permission

- Establish a guideline for the operation of off-road driving, such as vehicle number, size and driving time
- Use only KWS (or County Council) vehicles or tour company's vehicles which are accompanied by KWS staff accompany and give no permission to private tourist vehicles
- Introduce a license system for the operation of off-road driving
- Establish a special area for off-road driving in NRs along with a zoning system for use purposes, which will be near lodges and rotated yearly
- Charge a special fee for off-road driving and use the revenue for intensive patrol in other prohibited areas or vegetation restoration in a special area, and
- Monitor conditions of the vegetation damage and use the data to evaluate the future permission or cancellation of permission.

(4) Balloon Safari

Balloon safari has the same negative impacts as off-road driving on the vegetation and habitats, caused by vehicles accompanying the balloon. In line with the prohibition of off-road driving, the present types of balloon safari should actually be legally prohibited inside NPs and NRs.

However, it seems to be very difficult to immediately prohibit such safaris, since they have become very popular with tourists, who visit Masai Mara NR, and they have become one of the most valuable attraction in Kenya. It may reasonably be expected that tour companies and lodge owners will insist on their vested rights of balloon safari. Therefore, it is required to develop appropriate rules for their operations. It would rather be preferable to operate balloon safaris outside than inside NPs and NRs, particularly at private ranches.

In case of conditional approval for balloon safari in NRs or its adjacent areas, the following measures are proposed to be taken :

- Develop alternative amusements for balloon safari, such as by fixed/tied balloons, small-size airships and trains (e.g. moving Tree Top or The Ark, circuit styletrain)

- Provide a kind of incentive, such as special fee collection for the operation inside NRs, for shifting the operation areas from inside to outside NRs
- Establish a stricter guideline for the operation of balloon safari, such as for number of flight, flight time, noise and height control
- Reduce the number of vehicles accompanying the balloon and prohibit taking of short-cuts to the balloon's landing points by off-road driving
- Introduce a license system for the operation of balloon safari
- Establish a special area for balloon safari in NRs along with a zoning system for use purposes, which will be near lodges and rotated yearly, and
- Monitor conditions of the vegetation damage and use the data to evaluate the future's permission or prohibition.

(5) Disturbance of Wild Animals

Disturbance of wild animals is represented by animal harassment, animal feeding and garbage feeding. This will cause behavioural change, stress and disease in wild animals and then may decrease their populations inside NPs and NRs. Since disturbance of wild animals results from several other problems, such as too many visitors, lack of discipline, off-road and over-speed driving, balloon safari and garbage disposal, the main solutions for this problem are related to the development of visitor education and tour personnel training and reinforcement of patrols and regulations on tourism activities. The individual measures are to:

- Develop visitor education and tour personnel training and reinforce patrols on tourism activities
- Establish a guideline for game viewing of attractive animals, such as for approach distance, encirclement range and vehicle numbers, with reference to the results of the study made in Masai Mara NR (Gakahu, 1992),
- Reinforce prevention of off-road and over-speed driving
- Diversify tourism products from the present major game viewing with vehicles to other attractions, such as walking safari, camel/horse safari and fixed-point observation
- Install and maintain garbage-pits, incinerators and composts with enclosures or ditches at lodges and camping sites

- Drive away wild animals visiting lodges and camping sites to prowl about for garbage
- Prohibit setting up of feeding places for wild animals, where tourists can feed animals freely, at lodges and camping sites
- Establish a guideline for sea turtle's watching, such as for approach timing and tourist numbers, and
- Restrict tourism activities at breeding sites of sea turtles and regulate lighting toward beaches by hotels during night time.

(6) Destruction of Coral Reefs

Destruction of coral reefs is caused partly by unconscious tourism activities and it contributes to the degradation of important marine life habitats. The main solution to this problem is emphasising the development of visitor education as well as tour personnel training and patrol and regulations on tourism activities. The following individual measures are proposed :

- Develop visitor education and tour personnel training and reinforce patrols on tourism activities
- Instruct on the activities allowed to tourists in MNPs and MNRs by both, oral presentation and printed materials in major foreign languages
- Prohibit some tourism activities, such as marine skiing and high-speed boat driving inside coral reefs, and restrict anchorage for tourist boats
- Differentiate tourism activities depending on their experiences in marine sports and zoning to be adapted in each MNP and MNR
- Difficult to enforce intimidating to tourist.
- Develop other marine amusements, which will not damage the coral reef ecosystem, such as by artificial floating beaches and glass boats with submarine rooms, and
- Install and maintain sewage and waste disposal systems at hotels and lodges and monitor their operation conditions and water quality in the effluent.

6.2. Pollution Control Programme

6.3. General

The general environmental impacts caused by development activities related to tourism development are summarised in Table 10. 2.

About 23 items are identified as environmental impacts in the case of developing countries. Out of these 23 items, 18 items are related to tourism development projects. They account for a relatively large number among all types of projects. However, these 18 items possibly cause significant impacts depending upon the scale of the project and site conditions, so that large environmental problems may be avoided by implementing adequate environmental counter and management measures.

Table 10.2 Matrix for Environmental Items and Activities of Tourism Development

Major facilities and activities Activities which may cause impacts		Inland resort/ coastal resort/ urban tourism development						
		Overall evaluation	Before operation			After operation		
Environmental It			Reclamation and spatial occupancy	Operation of construction equipment and vehicles	Spatial occupancy	Operation of vehicles, ships and airplanes	Operation and maintenance of tourism	Accumulation of people and goods
Social Environment	1 Resettlement	○	○					
	2 Economic Activities	○	○			○	○	○
	3 Traffic and Public Facilities	○		○		○		
	4 Split of Communities	○			○			
	5 Cultural Property	○	○					○
	6 Water Rights/ Common Rights	○	○		○			
	7 Public Health Condition	○					○	○
	8 Waste	○	○				○	○
	9 Hazards (Risks)	○	○					
Natural Environment	10 Topography and Geology	○	○					
	11 Soil Erosion	○	○					
	12 Groundwater	○		○			○	
	13 Hydrological Situation	○	○					
	14 Coastal Zone	○	○		○			
	15 Fauna and Flora	○	○	○	○	○	○	○
	16 Meteorology							
	17 Landscape	○	○		○			
Pollution	18 Air Pollution							
	19 Water Pollution	○	○				○	
	20 Soil Contamination							
	21 Noise and Vibration	○		○		○	○	
	22 Land Subsidence							
	23 Offensive Odor							

Note: ○ - The items which may have a significant impact depending on the scale of the project and site conditions

No mark - The items which may not have a significant impact

Source: Environmental guidelines for Infrastructure Projects, XI Tourism Development, 1992 September, JICA

The following lists the environmental impacts, which are considered to be typically caused by tourism development projects :

- Soil erosion, water pollution, forest destruction and decrease of wildlife caused by large scale reclamation or landfill
- Degradation of flora and fauna caused by concentration or overflow of tourists
- Water pollution and waste problems caused by the operation of tourist accommodations or tourist facilities, and
- Increase of traffic accidents and jams caused by concentration or overflow of tourists at historical sites or museums.

To control the above mentioned environmental impacts, the following measures should be implemented and strengthened :

- Establishment of a pollution control programme for tourism development projects, and
- Establishment of the EIA system for tourism development projects.

6.2.2. Pollution Control Programme for Tourism Development Projects

(1) Requirements for the Pollution Control Programme

Environmental pollution problems such as water pollution and waste are increasing in Kenya. It is necessary to harmonise the environment and to provide appropriate incentives as well as penalties for wide spread adoption of environmental control measures in Kenya. The development of a national water resource management policy and land use control is also required.

Waste water, which is caused by industry, sewage, domestic waste and agricultural waste, pollutes rivers, lakes, the sea and surface waters. It is important to supply drinking water, in order to reduce diseases, improve living standard and improve and beautify the environment. It is required to establish discharge standards, relevant laws and regulations and a monitoring system.

(2) Components of The Pollution Control Programme

a. Implementation Body

A formal environmental pollution control programme is required in Kenya. However, responsibility for such a programme is likely to rest with the Ministry of Environment and Natural Resources. Therefore, the study team planned the environmental pollution control programme for tourism development projects in this study only

tentatively. Notwithstanding the above, the Environmental Division for tourism development projects within KWS should be strengthened.

b. Reinforcement of Relevant Laws and Regulations

The regulations for strengthening the Environmental Division in KWS will be established by KWS. One section in this division will be responsible for establishing environmental quality standards for water and drinking water. It will also be required to enforce the land use plans for environmental improvement of mixed residential-industrial areas.

The environmental quality standards for living environment items, which are needed to be established, are as follows :

- Biochemical oxygen demand (BOD) for rivers, and
- Chemical oxygen demand (COD) for lakes, ponds and coastal water areas.

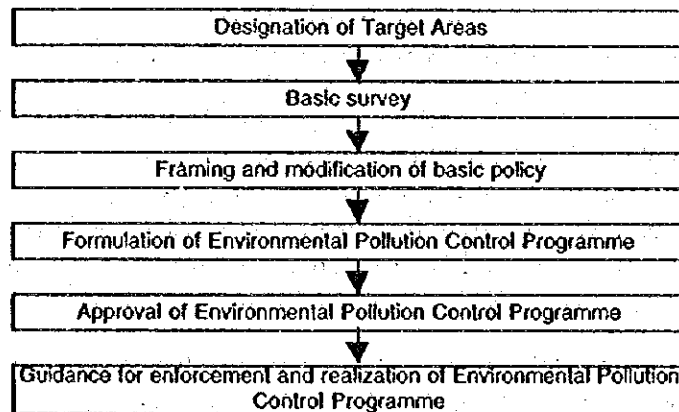
The required detailed policies are as follows :

- Industrial site policy and permission system for industrial siting and planning
- Regulation on structure, operation or management of industrial facilities
- Traffic regulations
- Emergency measures
- Remedial measures for pollution-related patients
- Assistance for the industrial sector on low interest loans for pollution control investment, and tax exemption for pollution control facilities and low pollution facilities
- Research and development, information services, and
- Penalties for violation of laws and regulations.

c. Procedure of the Environmental Pollution Control Programme

The recommended procedure of the programme is depicted in Figure 10. 6.

Figure 10.6 The Formulation of the Environmental Pollution Control Programme



Source: JICA Study Team

6.2.3. EIA System for Tourism Development Projects

(1) Target Projects for the EIA

The EIA for tourism development projects should be implemented on the following type of projects :

- Construction, reconstruction or improvement of transportation projects, such as national roads and other roads, railways, airports and ports and harbours related to tourism development projects, and

Construction, reconstruction or improvement of infrastructure projects, such as solid waste management, sewerage, ground water development and water supply related to tourism development projects.

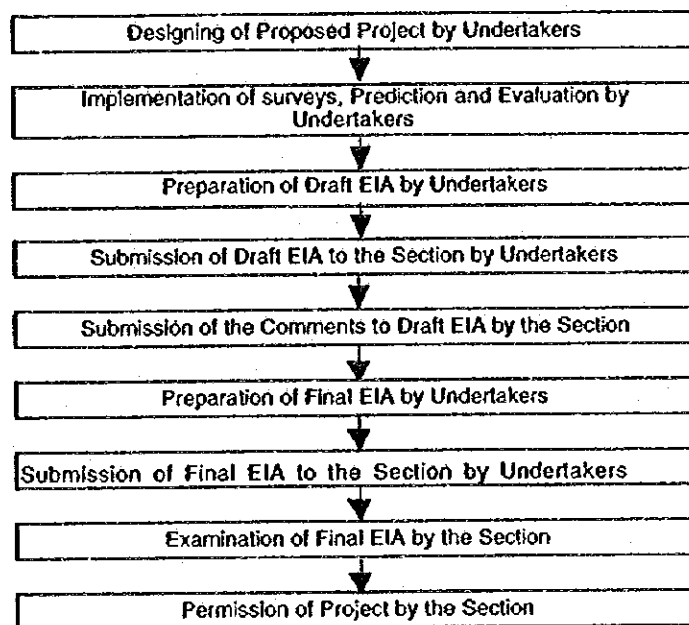
(2) Procedures of the EIA

The projects related to tourism development projects should be required to implement an EIA following the procedures as shown in Figure 10.7 :

- Project undertakers should provide a survey, prediction and evaluation beforehand and prepare a draft EIA
- Project undertakers should ask comments on the draft EIA from the Environmental Section of KWS. This Section would also hear comments from related municipality governors and they should return all comments to the relevant undertakers

- After receiving comments on the draft EIA, the undertakers should prepare a final EIA
- The project undertakers should send the final EIA to the involved section in KWS
- The Section should consider the environmental impact upon receipt of the final EIA, and finally
- The permission for the project should be submitted to the undertakers, in case that the project will not affect the environment.

Figure 10.7 Procedure of the EIA



Source: JICA Study Team

(3) Implementation Body

The Ministry of Environment and Natural Resources (MENR) is responsible for environmental administration in Kenya. The MENR has already proposed an EIA law to Parliament. Therefore, it is only natural that the MENR takes responsibility for managing the EIA after having established it. On the other hand, for national parks, the environmental regulations are being established by KWS, including the EIA. Since KWS has the authority to manage the national parks, including environmental matters, authority to carry out the EIA should be given from the MENR to KWS accordingly. For this end, the environmental unit of the KWS should be strengthened, so as to enable the Section to implement the EIA for tourism development projects in the national parks.

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